

### ABSTRACT OF THE DISCLOSURE

Network efficiency is improved by building and maintaining path integrity tables in nodes of a network. The tables include path integrity information for paths associated with the nodes. A path is defined by a source address, a destination address and a port or version number. Once a node is made aware of a path, either by handling network message traffic associated with the path or through manual entry, the node maintains path status information with information provided by normal network message traffic, or absent the normal network message traffic, by transmitting Echo Request messages and processing information related to Echo Response messages or the lack thereof. Information related to paths that are disabled for longer than a disabled path duration limit is deleted from the tables. A Gratuitous GTP Echo Response message can notify other nodes of an administrative state change in a node.